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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,320	02/28/2002	Joe Cargnelli	9351-95	1996

1059 7590 10/12/2004

BERESKIN AND PARR
SCOTIA PLAZA
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CANADA

EXAMINER

FORD, JOHN K

ART UNIT PAPER NUMBER

3753

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,320

Applicant(s)

CARGNELLI ET AL.

Examiner

John K. Ford

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/28/04
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 5, 7-9, 11, 12 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 7-9, 11, 12 and 17-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/1/03 (2 sheets)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Applicant's request for an RCE of 6/28/04 has been processed. Applicant indicated that the April 30, 2004 amendment is to be entered and considered. In that amendment claims 2,3,6, 10, and 13-16 have been cancelled. Claim 1, the only remaining independent claim, has been amended to include a new limitation that there is a second humidification unit of the same construction as the first one and that the two units (the first and second) have common coolant supply.

Unfortunately the Examiner can find no original disclosure to support what is now claimed.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4, 5, 7-9, 11, 12, and 17-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no original disclosure to support the newly added limitation that the "first and second heat exchangers are arranged for heat to be removed therefrom by a common coolant supply." Figure 1 doesn't show this and Figure 7 doesn't show this. The bottom portion of Figure 7 is so lacking in detail at present that it doesn't even appear to be operative. Pipes (shown in the upper portion of figure 7) are critically missing in large numbers as evidenced by comparing the upper and lower portions of Figure 7. It is however, beyond dispute that first heat exchanger 118 and second heat exchanger 118a are not arranged for heat to be removed from a

common coolant supply. Heat exchanger 118a doesn't even appear to have a proper fluid connection to and from any coolant supply. Applicants remarks beginning on page 7 of the April 30, 2004 response address no comments to where the specification, original claims or drawing figures support these limitations.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of JP 9-35737, JP 5-256468 and Weitman.

JP 9-35737 teaches two humidifiers 2A and 2B for properly conditioning fuel gas and oxidizer before entering a fuel cell. In the case of cells it is known to have two humidifiers, one for the oxidizing gas (i.e. 2A of JP 9-35737) and one for the fuel gas, (i.e. 2B of JP 35737). To have used two of the systems for delivering precise humidity and temperature to condition fuel gas and oxidizer to a fuel cell would have been obvious from the teaching of JP 9-35737 since it is apparently necessary to insure optimal operational efficiency. No details are shown in the aforementioned reference of the particulars of humidifiers 2A and 2B.

JP '468 teaches a steam source 24 connected to a mixing chamber 20 for mixing the injected steam with incoming process gas from compressor 23. The highly saturated process gas is subsequently cooled below its dew-point by cooler 25 and a separator 28 discharges condensate. A heater 31 subsequently is used to heat the process stream to a desired temperature. One additional refinement of JP '468 is the use of a humidity controller 30

(controlled by a dew-point instrument 29) downstream of the saturating cooler 25. In view of the teaching of Weitman, which shows a saturator followed by a reheater and which lacks the refinement discussed above (i.e. the use of a humidity controller 30 controlled by a dew-point instrument 29), it would have been obvious to have omitted the dew-point instrument 29 and controller 30 in JP '468 to attain a less expensive structure. In general the omission of an element and its associated function is not deemed to be patentable, In re Karlson, 136 USPQ 184.

Alternatively, to have replaced saturator unit 1 of Weitman with units 20, 24 and 25, 27 & 28 of JP '468, which perform the same function, would have been obvious to reduce the overall size of the saturation section, and advantageously permit high temperature saturation to take place.

In view of JP '737 it would have been obvious to have duplicated the aforementioned JP '468/Weitman system for as many humidifier process streams as desired, which in the case of fuel cells, is two, one for the fuel gas and one for the oxidizer.

Claims 4 and 5 are rejected under 35 U.S.C. 130(a) as being unpatentable over the prior art as applied to claim 1 above, and further in view of Ebbing et al. (5,544,275) or Othmer (3,617,699).

Heaters for long delivery pipes where significant temperature drops occur are well known to prevent the condensation of gas components. To have used either of the heaters of Ebbing or Othmer in the outlet line of the prior art to keep the outlet line from experiencing condensation would have been obvious.

Claims 8, 9, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claim 7 above, and further in view of Oswalt et al. (4,769,998).


Oswalt teaches a combined heater/chiller to achieve particularly high levels of regulation. To have substituted this type of chilled fluid source in place of the chilled fluid source shown in the prior art (i.e. element 27 in JP '468 or the unillustrated chilled fluid source connection to inlet 3 and outlet 4 of Weitman) would have been obvious to one of ordinary skill.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claim 10 above, and further in view of Gunter USP 3,671,273.

Gunter teaches a shut-off valve (71), trap (74 or 68), pressure regulators 96 and non-return valve 64 as conventional components of a steam handling system. To have added such components to the steam source of the prior art to regulate it in a conventional manner would have been obvious to permit the operator to controllably operate the steam source.

Regarding claim 12 to have duplicated the shut-off valve (71), pressure regulator (96) and non-return valve (64) for each of the humidifier for the fuel gas and oxidizer of the full cell would have been obvious from the teaching of JP 9-35737 which shows separate humidifiers for each of the fuel gas and oxidizer streams.

Any inquiry concerning this communication should be directed to John Ford at telephone number (703) 308-2636.



John K. Ford
Primary Examiner